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European **Patent Office**

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Lucas, Phillip Brian Lucas & Co. 135 Westhall Road Warlingham, Surrey CR6 9HJ GRANDE BRETAGNE



FPO Customer Services

Tel.: +31 (0)70 340 45 00

Date 31.01.07

Reference SLWK1941.001EP1 Application No./Patent No.

05776434.2 - 2101 PCT/US2005012028

Applicant/Proprietor

Samaritan Pharmaceuticals, Inc., et al

Notification of European publication number and information on the application of Article 67(3) EPC

The provisional protection under Article 67(1) and (2) EPC in the individual contracting states becomes effective only when the conditions referred to in Article 67(3) EPC have been fulfilled (for further details, see information brochure of the European Patent Office "National Law relating to the EPC" and additional information in the Official Journal of the European Patent Office).

Pursuant to Article 158(1) EPC the publication under Article 21 PCT of an international application for which the European Patent Office is a designated Office takes the place of the publication of a European patent application.

The bibliographic data of the above-mentioned Euro-PCT application will be published on 28.02.07 in Section I.1 of the European Patent Bulletin. The European publication number is 1755605.

In all future communications to the European Patent Office, please quote the application number plus Directorate number.

Receiving Section





P.B.5818 - Patentlaan 2 2280 HV Rijswijk (ZH) (070) 3 40 20 40 FAX (070) 3 40 30 16 Europäisches Patentamt European Patent Office Office européen des brevets

Generaldirektion 1

Directorate General 1

Direction générale 1

Lucas, Phillip Brian Lucas & Co. 135 Westhall Road Warlingham, Surrey CR6 9HJ GRANDE BRETAGNE



EPO Customer Services

Tel.: +31 (0)70 340 45 00

Date 18-01-2007

Reference SLWK1941.001EP1 Application No./Patent No.

05776434.2 - 2107 PCT/US2005012028

Applicant/Proprietor

Samaritan Pharmaceuticals, Inc., et al

Communication pursuant to Rules 109 and 110 EPC

(1) Amendment of application documents, especially the claims (R. 109 EPC)

The above mentioned international (Euro-PCT) application has entered the European phase, or can do so, once the necessary conditions are fulfilled.

Under Articles 28, 41 PCT, Rules 52, 78 PCT and Rule 86(2) to (4) EPC, the applicant may amend the application documents after receiving the international search report.

Whether or not he has already done so, he now has a further opportunity to file amended claims or other application documents within a non-extendable time limit of one month after notification of the present communication (R. 109 EPC).

The claims applicable on expiry of the above time limit, i.e. those filed on entry into the European phase or in response to the present communication, will form the basis for the calculation of any claims fee to be paid (see page 2) and for any supplementary search to be carried out under Article 157(2) EPC (R. 109 EPC).



(2) Claims fees under Rule 110 EPC

If the application documents on which the European grant procedure is to be based comprise more than ten claims, a claims fee shall be payable for the eleventh and each subsequent claim within the period provided for in Rule 107(1) EPC.

₫,	Based on the application documents currently on file, all necessary claims fees have already been paid (or the documents do not comprise more than 10 claims).
	All necessary fees will be/have been debited automatically according to the automatic debit order.
	The claims fee due for the claims to were not paid within the above-mentioned period.

Any non-paid claims fee, either based on the current set of claims or on any amended claims to be filed pursuant to Rule 109 EPC (see page 1), may still be validly paid within a non-extendable period of grace of one month after notification of this communication.

If a payment is made for only some of the claims, it must be indicated for which claims it is intended. If a claims fee is not paid in due time, the claim concerned is deemed to be abandoned (R. 110(4) EPC).

If claims fees have already been paid, but on expiry of the above-mentioned time limit there is a new set of claims containing fewer fee-incurring claims than previously, the claims fees in excess of those due under Rule 110(2), 2nd sentence, EPC will be refunded (R. 110(3) EPC).

You are reminded that any supplementary search under Article 157(2) EPC will relate only to the last set of claims applicable on expiry of the above time limit AND will be confined to those fee-incurring claims for which fees have been paid in due time.

The fee for the eleventh and each subsequent claim is EUR 45,00.

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EPO Customer Services

Tel.: +31 (0)70 340 45 00

Date 13.12.06

Reference SLWK1941.001EP1

Application No./Patent No. 05776434.2-2107-US2005012028

Applicant/Proprietor

Samaritan Pharmaceuticals, Inc., et al

Refund of fees

The following fees were paid in respect of the application 05776434.2:

Fee

Code

Voucher No

Date

Currency

Amount

Search fee

002

00702270 10.11.06

EUR

576,00

REFUND ORDER

- According to Art. 157(3)a) EPC no supplementary search report is drawn up (see also OJ EPO 1994, 1. 691 and 1995, 511).
- The refund will be done by: 2. CREDITING THE DEPOSIT ACCOUNT 28050111.

Amount refundable:

Code

Currency

Amount

Voucher No

002

EUR

576,00

00747931

Total:

EUR

576,00

The Authorising Officer Adams (49)(89)23992668



LUCAS & CO.

Chartered Patent Agents European Patent Attorneys

CONFIRMATION OF FAX

135 WESTHALL ROAD WARLINGHAM **SURREY CR6 9HJ ENGLAND**

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Fax: INT+44+1883+622997

e-mail; mail@lucas-uk.com

EPO - Munich

10th November 2006

1 3. Nov. 2006

The European Patent Office PB5818 Patentlaan 2 NL-2280 HV Rijswijk Netherlands

Dear Sirs

Re: European Patent Application No. 05 776 434.2 based on PCT Patent Application No. PCT/US2005/012028 (Filed 12th April 2005) claiming priority from US Patent Application No. 60/562,643 (Filed 15th April 2004) Applicants: Samaritan Pharmaceuticals, Inc.; and

Georgetown University Inventors: LECANU, L.; GREESON, J.; PAPADOPOULOS, V. "Use of (4-Alkylpiper Azinyl) (Phenyl) Methanones in the Treatment of Alzheimer's Disease"

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National Fee;

Zur Kasse

2. Designation Fees (Max 7);

3. Search fee (80% i.e. Euro 576);

Substantive Examination Fee (100% i.e. Euro 1490); and
 Additional claims fee (4).

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Yours faithfully

Brian Lucas/gar Chartered Patent Agent European Patent Attorney

Enc: Fee sheet (Munich) New claims

Records: - SLWK 1941.001EP1

WHAT IS CLAIMED IS:

1. Use of a compound of formula 1:

wherein:

- a) R^1 , R^2 and R^3 are individually H, OH, halo, (C_1-C_6) alkyl, (C_1-C_6) alkoxy, (C_3-C_6) cycloalkyl, (C_3-C_6) cycloalkyl((C_1-C_6) alkyl), (C_2-C_6) alkenyl, (C_2-C_6) alkynyl, (C_1-C_6) alkanoyl, halo(C_1-C_6)alkyl, hydroxy(C_1-C_6)alkyl, (C_1-C_6) alkoxycarbonyl, (C_1-C_6) alkylthio, thio(C_1-C_6)alkyl, (C_1-C_6) alkanoyloxy, $N(R^6)(R^7)$ wherein R^6 and R^7 are individually H, O, (C_1-C_6) alkyl, (C_3-C_6) cycloalkyl, (C_3-C_6) cycloalkyl((C_1-C_6) alkyl, phenyl or benzyl, or R^6 and R^7 , together with the N to which they are attached form a 5- or 6-membered ring, optionally comprising 1-2 S, $N(R^6)$ or nonperoxide O, or R^1 and R^2 together are methylenedioxy;
- b) Y and Z together are =0, $-O(CH_2)_mO$ or $-(CH_2)_m$ wherein m is 2-4, or Y is H and Z is OR^9 or SR^9 , wherein R^9 is H or (C_1-C_4) alkyl;
- c) X is (C_1-C_6) alkyl, (C_1-C_6) alkoxy, hydroxyl (C_1-C_6) alkyl (C_3-C_{12}) alkenyl, (C_2-C_6) alkynyl, carboxy, (C_1-C_6) alkoxycarbonyl, thio (C_1-C_6) alkyl, (C_3-C_{12}) heterocyclo, (C_3-C_{12}) heterocycloalkyl (C_1-C_6) alkyl, aryl or heteroaryl, optionally substituted by 1, 2 or 3 \mathbb{R}^1 ;

- 2. The use of claim 1 wherein the medicament is for inhibiting A β peptide-induced neurotoxicity preferably A $\beta_{1.42}$ neurotoxicity.
- 3. The use of claim 1 wherein the medicament is for inhibiting glutamate-induced neurotoxicity in said mammal.

- 4. The use of any one of claims 1-3 wherein the mammal is a human.
- 5. The use of any one of claims 1-4 wherein R^1 , R^2 or R^3 is $N(R^6)(R^7)$.
- 6. The use of any one of claims 1-5 wherein R^2 is (C_1-C_6) alkoxy.
- 7. The use of any one of claims 1-6 wherein R^3 is (C_1-C_6) alkoxy.
- 8. The use of any one of claims 1-4 or 6 or 7 wherein each of \mathbb{R}^1 , \mathbb{R}^2 and \mathbb{R}^3 is (C_1-C_3) alkoxy.
- 9. The use of any one of claims 1-8 wherein Y and Z together are =0.
- 10. The use of any one of claims 1-8 wherein Y is H and Z is OH.
- 11. The use of any one of claims 1-10 wherein X is (C₁-C₆)alkyl.
- 12. The use of any one of claims 1-11 wherein X is CH_{3.}
- 13. The use of claim 1 wherein the compound of formula 1 is [(2,3,4-trimethoxy)phenyl]-[4-ethylpiperazin-1-yl] methanone.
- 14. A composition comprising a compound of formula (I) as defined in claim 1 in combination with a pharmaceutically-acceptable carrier.

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Chartered Patent Agents European Patent Attorneys

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135 WESTHALL ROAD WARLINGHAM **SURREY CR6 9HJ ENGLAND**

Telephones: 01883-626211

10th November 2006

EPO - DG 1

The European Patent Office PB5818 Patentlaan 2 NL-2280 HV Rijswijk Netherlands

13. 11. 2006



Dear Sirs

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Treatment of Alzheimer's Disease"

Case: SLWK 1941.001EP1

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We have been instructed to act on behalf of Samaritan Pharmaceuticals, Inc. and Georgetown University in the prosecution of the European Regional Phase of this application.

We are instructed that the Applicant wishes to proceed in all available states which we believe are: Austria, Belgium, Bulgaria, Switzerland (including Liechtenstein), Cyprus, Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, UK, Greece, Hungary, Ireland, Iceland, Italy, Lithuania, Luxembourg, Monaco, the Netherlands Poland Portugal Romania Sweden the Netherlands, Poland, Monaco, Slovenia, Slovakia and Turkey.

We have today sent a copy of this letter to your Cash & Accounts department in Munich, together with a fee sheet instructing them to deduct the sum of EUR 2976.00 from our Deposit Account No. 28050111 to cover:-

- National Fee;
- Designation Fees (Max 7);
- 3. Search fee (80% i.e. Euro 576); 4. Substantive Examination Fee (100% i.e. Euro 1490); and
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Yours faithfully

Brian Lucas/gar Chartered Patent Agent European Patent Attorney

Enc: Fee sheet (Munich)
New claims

Records: - SLWK 1941.001EP1

11. 2006

65

1. Use of a compound of formula I:

$$\begin{array}{c|c}
R^2 & & \\
\hline
Z & & \\
\hline
R^3 & & \\
\end{array}$$

$$\begin{array}{c|c}
X & & \\
\hline
N & \\
\end{array}$$

$$\begin{array}{c|c}
X & & \\
\hline
N & \\
\end{array}$$

$$\begin{array}{c|c}
X & & \\
\hline
N & \\
\end{array}$$

$$\begin{array}{c|c}
X & & \\
\end{array}$$

wherein:

- a) R^1 , R^2 and R^3 are individually H, OH, halo, $(C_1\text{-}C_6)$ alkyl, $(C_1\text{-}C_6)$ alkoxy, $(C_3\text{-}C_6)$ cycloalkyl, $(C_3\text{-}C_6)$ cycloalkyl($(C_1\text{-}C_6)$ alkyl), $(C_2\text{-}C_6)$ alkenyl, $(C_2\text{-}C_6)$ alkynyl, $(C_1\text{-}C_6)$ alkanoyl, halo $(C_1\text{-}C_6)$ alkyl, hydroxy $(C_1\text{-}C_6)$ alkyl, $(C_1\text{-}C_6)$ alkoxycarbonyl, $(C_1\text{-}C_6)$ alkylthio, thio $(C_1\text{-}C_6)$ alkyl, $(C_1\text{-}C_6)$ alkanoyloxy, $N(R^6)(R^7)$ wherein R^6 and R^7 are individually H, O, $(C_1\text{-}C_6)$ alkyl, $(C_3\text{-}C_6)$ cycloalkyl, $(C_3\text{-}C_6)$ cycloalkyl, $(C_3\text{-}C_6)$ alkyl, phenyl or benzyl, or R^6 and R^7 , together with the N to which they are attached form a 5- or 6-membered ring, optionally comprising 1-2 S, $N(R^6)$ or nonperoxide O, or R^1 and R^2 together are methylenedioxy;
- b) Y and Z together are =0, $-O(CH_2)_mO$ or $-(CH_2)_m$ wherein m is 2-4, or Y is H and Z is OR^9 or SR^9 , wherein R^9 is H or (C_1-C_4) alkyl;
- c) X is (C_1-C_6) alkyl, (C_1-C_6) alkoxy, hydroxyl (C_1-C_6) alkyl (C_3-C_{12}) alkenyl, (C_2-C_6) alkynyl, carboxy, (C_1-C_6) alkoxycarbonyl, thio (C_1-C_6) alkyl, (C_3-C_{12}) heterocyclo, (C_3-C_{12}) heterocycloalkyl (C_1-C_6) alkyl, aryl or heteroaryl, optionally substituted by 1, 2 or 3 R¹;

- 2. The use of claim 1 wherein the medicament is for inhibiting A β peptide-induced neurotoxicity preferably A β_{1-42} neurotoxicity.
- 3. The use of claim 1 wherein the medicament is for inhibiting glutamate-induced neurotoxicity in said mammal.

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- 5. The use of any one of claims 1-4 wherein R^1 , R^2 or R^3 is $N(R^6)(R^7)$.
- 6. The use of any one of claims 1-5 wherein R^2 is (C_1-C_6) alkoxy.
- 7. The use of any one of claims 1-6 wherein R^3 is (C_1-C_6) alkoxy.
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- 9. The use of any one of claims 1-8 wherein Y and Z together are =0.
- 10. The use of any one of claims 1-8 wherein Y is H and Z is OH.
- 11. The use of any one of claims 1-10 wherein X is (C₁-C₆)alkyl.
- 12. The use of any one of claims 1-11 wherein X is CH₃
- 13. The use of claim 1 wherein the compound of formula 1 is [(2,3,4-trimethoxy)phenyl]-[4-ethylpiperazin-1-yl] methanone.
- 14. A composition comprising a compound of formula (I) as defined in claim 1 in combination with a pharmaceutically-acceptable carrier.

Haque

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135 WESTHALL ROAD WARLINGHAM SURREY CR6 9HJ ENGLAND .

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10th November 2006

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Dear Sirs

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Enc: Fee sheet (Munich) New claims

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Enc: Fee sheet (Munich) New claims

Mew CIAIMS

Records: - SLWK 1941.001EP1

WHAT IS CLAIMED IS:

I. Use of a compound of formula I:

$$\begin{array}{c|c}
R^2 & & \\
\hline
Z & & \\
\hline
R^3 & & \\
\end{array}$$

$$\begin{array}{c|c}
V & CH_2 \longrightarrow X & (I)$$

wherein:

a) R^1 , R^2 and R^3 are individually H, OH, halo, (C_1-C_6) alkyl, (C_1-C_6) alkoxy, (C_3-C_6) cycloalkyl, (C_3-C_6) cycloalkyl((C_1-C_6) alkyl), (C_2-C_6) alkenyl, (C_2-C_6) alkynyl, (C_1-C_6) alkanoyl, halo (C_1-C_6) alkyl, hydroxy (C_1-C_6) alkyl, (C_1-C_6) alkoxycarbonyl, (C_1-C_6) alkylthio, thio (C_1-C_6) alkyl, (C_1-C_6) alkanoyloxy, $N(R^6)(R^7)$ wherein R^6 and R^7 are individually H, O, (C_1-C_6) alkyl, (C_3-C_6) cycloalkyl, (C_3-C_6) cycloalkyl, phenyl or benzyl, or R^6 and R^7 , together with the N to which they are attached form a 5- or 6-membered ring, optionally comprising 1-2 S, $N(R^6)$ or nonperoxide O, or R^1 and R^2 together are methylenedioxy;

b) Y and Z together are =0, $-O(CH_2)_mO$ - or $-(CH_2)_m$ - wherein m is 2-4, or Y is H and Z is OR^9 or SR^9 , wherein R^9 is H or (C_1-C_4) alkyl;

c) X is (C_1-C_6) alkyl, (C_1-C_6) alkoxy, hydroxyl (C_1-C_6) alkyl (C_3-C_{12}) alkenyl, (C_2-C_6) alkynyl, carboxy, (C_1-C_6) alkoxycarbonyl, thio (C_1-C_6) alkyl, (C_3-C_{12}) heterocyclo, (C_3-C_{12}) heterocycloalkyl (C_1-C_6) alkyl, aryl or heteroaryl, optionally substituted by 1, 2 or 3 \mathbb{R}^1 ;

- 2. The use of claim 1 wherein the medicament is for inhibiting A β peptide-induced neurotoxicity preferably A β_{1-42} neurotoxicity.
- 3. The use of claim 1 wherein the medicament is for inhibiting glutamate-induced neurotoxicity in said mammal.

- 4. The use of any one of claims 1-3 wherein the mammal is a human.
- 5. The use of any one of claims 1-4 wherein R^1 , R^2 or R^3 is $N(R^6)(R^7)$.
- 6. The use of any one of claims 1-5 wherein R^2 is (C_1-C_6) alkoxy.
- 7. The use of any one of claims 1-6 wherein R^3 is (C_1-C_6) alkoxy.
- 8. The use of any one of claims 1-4 or 6 or 7 wherein each of R^1 , R^2 and R^3 is (C_1-C_3) alkoxy.
- 9. The use of any one of claims 1-8 wherein Y and Z together are =0.
- 10. The use of any one of claims 1-8 wherein Y is H and Z is OH.
- 11. The use of any one of claims 1-10 wherein X is (C_1-C_6) alkyl.
- 12. The use of any one of claims 1-11 wherein X is CH₃.
- 13. The use of claim 1 wherein the compound of formula 1 is [(2,3,4-trimethoxy)phenyl]-[4-ethylpiperazin-1-yl] methanone.
- 14. A composition comprising a compound of formula (I) as defined in claim 1 in combination with a pharmaceutically-acceptable carrier.







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